REMARKS

This amendment is responsive to the official action of August 1, 2003 (Paper No. 9), wherein claims 1-6 and 8 were again and finally rejected under 35 U.S.C. §103. The rejection continues to rely on combinations of Berssen (US 5386287) and Fann (US 6279828). Ackley (6012638) is newly cited for providing both numbers and letters in a data code. Barker (US 4900513) is again cited for encoding not only the cuvettes but also their containers.

The rejection erroneously relies on the proposition that a checksum is a control code like a start/stop code. Applicant's invention concerns having **control** codes at either or both ends of the barcode, namely at least one of the **start code** and the **stop code**. It is conventional to use control codes to mark off the beginning and end of a data value, because the control codes initiate and conclude the collection of digit values. However, applicant has also provided at least two optional versions of at least one of the start code and the stop code, both of which function as control codes, but wherein the selection among the two or more different operational control code versions is interpreted as a supplemental or added variation in the output data code.

Applicant's invention is not found or suggested anywhere in the prior art cited and relied upon. The examiner's interpretation of a checksum value as an optionally selectable control code, and as a code that can increase the number of bits encoded by a predetermined number of codes, both are technically and legally insufficient to establish that applicant's invention claimed as a whole would have been known or obvious. Therefore, the claims are properly allowable.

Applicant's claims as already presented included claims that defined such selection among two or more operational control codes, and the claims cannot be interpreted as if the "two" in "two or more" are simply a conventional start code and a conventional stop code. For example, see claim 8 as previously amended, wherein at least one of the control codes has alternative versions interpreted as data values. Therefore, this issue is not a new issue requiring further consideration or search.

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Applicant believes that this amendment should be entered and the claims should now be allowed. However, if the examiner maintains the rejection, applicant requests entry of this amendment for purposes of appeal.

According to the official action, applicant's invention could be met routinely by a combination Berssen and Fann, because Fann supplies a start code, stop code and checksum, and each barcode encodes a different value (resulting in two or more different possible checksum values). The examiner thus regards a checksum as meeting or suggesting applicant's control code. To apply the rejection as suggested by the examiner, one must assume that a checksum might possibly have multiple values chosen arbitrarily, thereby adding to the extent of information that can be encoded.

Such a position is technically erroneous. The checksum value is wholly and necessarily determined by the values of the data digits that the checksum accompanies. It is not even possible, much less obvious, to choose what value will appear as a checksum. The value that appears as a checksum, cyclic redundancy code (CRC) or parity check bit or the like, is the result of a mathematical function applied to the values of the data. A simple checksum digit is determined by summing the values of the data digits and truncating the sum to one least-significant digit.

The checksum that results from the data values in such a mathematical function is a repetitive representation of the data values, used for error checking. It carries no information that is not contained in the data digits. When using a checksum, CRC or parity check, a full representation of the data digits, namely the digit values, is transmitted together with a partial representation of the same values (namely the checksum). If the reader is configured to generate a new checksum independently of the checksum that has been read, then a comparison between the checksum generated locally, versus the checksum that was previously generated and transmitted with the data values, provides a way (although not foolproof) of determining whether the data has been transmitted intact.

A checksum is defined in the industry as, "a redundant check in which groups of digits are summed usually without regard for overflow, and that sum checked against a

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previously computed sum to verify accuracy.' IEEE Standard Dictionary of Electrical and Electronics terms, ANSI/IEEE Std. 100-1984. The sum is the result of the data values. The sum cannot be arbitrarily chosen. The possibility of having more than one checksum for a given group of digits would reduce or even defeat the extent to which errors could be detected by computing a checksum from the digits and comparing the result to a checksum contained in the record being read.

Applicant submits that for the foregoing reasons, the claims cannot be interpreted to conclude that the prior art checksum is or could function as a data value.

The official action also regards the checksum as a control code. Reconsideration is requested on that ground as well. A checksum does not control any aspect of the reading of data in a bar code. The checksum is redundant element in the data being read. There is no suggestion in the prior art that the checksum is a control code.

As the examiner states in the official action, claims are to be read as broadly as reasonably possible in view of the specification. The examiner contends that the claim limitations are not limited to start codes and stop codes as control codes. Applicant respectfully submits that the examiner's position is erroneous. Claim 8, even prior to this amendment, referred to "different values selected for said at least one of the codes used for detecting start/stop of said bar code." Applicant proposes to render that issue moot. The claims are now amended to limit the variant control codes, which according to the invention are used as supplemental data values, to one or both of the start and stop codes. The invention claimed as a whole is not found or suggested in the prior art.

In the official action, substantially all the examiner's comments are directed to citing from the prior art the use of linear bar codes on cuvettes, and teachings wherein bar codes have start and stop characters, checksums and/or digits that might be numeric or alphanumeric. In the rejection of claims 1-4 and 8, it is said that it is obvious (by combining Fann and Berssen) to improve the operation of a reader that uses start and stop codes to initiate and end reading, by adding a checksum, the incentive being to reduce errors in reading. That position says only that checksums are useful to reduce errors. Applicant's claims are not directed to reducing errors and several of the

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rejected claims do not require checksums. The rejection fails to meet the invention claimed as a whole.

The same rejection of claims 1-4 and 8 over a combination of Fann and Berssen says that Fann teaches a one dimensional bar code wherein the start and stop code serve as control codes and the data portion and checksum code serve as information. The rejection then concludes it would be obvious to make a combination of Fann and Berssen to reach applicant's invention. However, the rejection expressly admits that the "control codes" are the start and stop codes and the data values are the data and checksum. Thus the rejection has not reached the invention as a whole. There is no possibility of selection among alternative functioning control codes as a means to encode extra information. The rejection does not meet the invention claimed as a whole.

Even assuming, *arguendo*, that the rejection should be read to suggest that the checksum could be a changeable code with alternative values, which would not meet the claimed recital of control codes, the incentive suggested by the examiner is missing. If the checksum could have alternative values, it would not further reduce errors because the checksum would lack a mathematically certain relationship to the data values. If the checksum is arbitrary and not redundant, it is not useful as an error checking datum. Even assuming the possibility of two or more alternative checksum values to represent a given set of data digits (which is improper hindsight), the result would obviously be less effective error checking and the suggested incentive to make the combination would be lacking.

In short, there is no basis of record to conclude that the invention claimed as a whole would have been obvious. There is no prima facie showing of obviousness because there is no incentive apparent from the prior art that would lead to the changes to the prior art that would even move in the direction of the invention.

All the rejections rely substantially on Berssen and Fann as discussed above. the combination with additional references including Ackley and Barker does not supply the technical, logical and legal gap between the basic references and applicant's

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invention claimed as a whole. Therefore, claims 5 and 6 are allowable together with claims 1-4 and 8.

Every effort has been made to amend the claims to particularly and distinctly define the invention. The claims as amended are definite. The differences between the invention and the prior art are such that the subject matter claimed as a whole is not shown to have been known or obvious.

Reconsideration and allowance of the pending claims are requested.

Respectfully submitted,

Date: Sept. 25, 2003

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Docket Nos. D5620-26
3005-29
KW 150 US

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